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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,329	11/20/2003	Thomas J. Pinnavaia	MSU 4.1-626	1051
21036	7590	04/13/2006	EXAMINER	
MCLEOD & MOYNE, P.C. 2190 COMMONS PARKWAY OKEMOS, MI 48864			PASTERCZYK, JAMES W	
			ART UNIT	PAPER NUMBER

1755

DATE MAILED: 04/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/718,329	Applicant(s) PINNAVAIA ET AL.	
	Examiner J. Pasterczyk	Art Unit 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/20/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/20/03</u> . | 6) <input type="checkbox"/> Other: _____ |

1. The abstract of the disclosure is objected to because it lacks mention of the use of hydrolysable organosilane compounds to make the organofunctional group. Correction is required. See MPEP § 608.01(b).

2. Claims 1, 2, 7, 8, 17, 20, 24, 25, 34 and 37 are objected to because of the following informalities: in claim 1, l. 7, after “organofunctional” insert --, the process--. In claim 2, l. 3, change “organo” to --organofunctional--. In claim 7, l. 2, correct the spelling to --the--. In claim 8, end of l. 12, change “a” to --the--. In claim 17, l. 8, the coefficient y appears to be some kind of mole fraction rather than simply an absolute number; in l. 17 “incorporation” would be better phrased --addition--. In claim 20, last line, delete the first “and”. In claim 24, l. 24, correct the spelling of --the--. In claim 25, l. 5, delete “and”. In claim 34, l. 8, insert --the-- after “is”. In claim 37, l. 5, delete the first “and”. Appropriate correction is required.

3. Claims 3, 27, 31, and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, the phrase “selected from the group comprising” is used; this mixes open and closed Markush language, hence it is not clear whether the recited group is open or closed.

Claim 31 also has this problem.

Claim 27 contains the trademark/trade name PLURONIC 123. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product.

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A trademark or trade name is used to identify a source of goods, and not the goods themselves.

Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a surfactant and, accordingly, the identification/description is indefinite.

Further in claim 31, the language of the second line is garbled, making it unclear if “trialkylated” modifies both “benzenes” and “alkanes”; addition of commas would help here.

In claim 36, the organo group “comprising” “only” some particular elements mixes open and closed Markush language, making it unclear whether the group is open or closed.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 33, 36 and 37 are rejected under 35 U.S.C. 103(a) as being obvious over Pinnavaia et al., USP 6,506,485 (hereafter referred to as Pinnavaia I).

The applied reference has a common assignee and two common inventors with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by:

(1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention “by another”; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR

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1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Pinnavaia I discloses the invention substantially as claimed (examples).

Pinnavaia I lacks explicit disclosure of the value of x denoting the mole fraction of silicon centers having an organic group bonded thereto.

However, Pinnavaia I does teach that a variety of such mole fractions are obtainable in its composition.

It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Pinnavaia I with a reasonable expectation of obtaining a highly-useful organofunctional silica with the expected advantage of the silica being optimized as a catalyst for hydrocarbon cracking.

6. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esch et al., USP 6,977,065 (hereafter referred to as Esch) (note ancestry dates) in view of Richer et al., *Chem. Commun.*, 1998, pp. 1775-1776 (hereafter referred to as Richer).

Esch discloses the invention substantially as claimed (abstract; col. 2, l. 60 to col. 3, l. 51) (note especially formula II of col. 3, l. 15 and col. 3, l. 46-49).

Esch lacks disclosure of the use of a surfactant in the preparation of its organomodified silica.

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However, Richer teaches that it is conventional in the preparation of organomodified silicas to include a surfactant in their preparation (abstract; paragraph bridging the two columns of p. 1775).

It would have been obvious to one of ordinary skill in the art to apply the teaching of Richer to the disclosure of Esch with a reasonable expectation of obtaining a highly-useful method of making a mesoporous organofunctional silica with the expected benefit of the silica being a selective catalyst or absorbent.

7. Claims 8-16, 33, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esch in view of Richer as applied to claims 1-7 above, and further in view of Stucky et al., *Chem. Mater.*, 2000, vol. 12, pp. 686-696 (hereafter referred to as Stucky).

The disclosures of Esch and Richer have been discussed in paragraph 6 above.

The primary references lack disclosure of the use of an emulsifier in the process to make its organofunctional silica.

However, Stucky teaches in its abstract that the use of emulsifiers in the preparation of silicas results in materials having large pores and a foam structure.

It would have been obvious to one of ordinary skill in the art to apply the teaching of Stucky to the disclosures of Esch and Richer with a reasonable expectation of obtaining a highly-useful method of making an organofunctionalized silica with the expected benefit of the material being usable as a catalyst support or separation medium.

8. Claims 17-23 and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esch in view of Richer as applied to claims 1-7 above, and further in view of Pinnavaia et al., USP 6,607,705 (hereafter referred to as Pinnavaia II).

The disclosures of Esch and Richer have been discussed in paragraph 6 above.

Neither of Esch nor Richer discloses the addition of an aluminate source in the preparation of its organosilica.

However, Pinnavaia II teaches that in the preparation of aluminosilicates, it is conventional to use an anionic aluminate source (col. 3, l. 17-34; col. 3, l. 53 to col. 4, l. 6; col. 4, l. 15-61).

It would have been obvious to one of ordinary skill in the art to apply the teaching of Pinnavaia II to the disclosures of Esch and Richer with a reasonable expectation of obtaining a highly-useful organoaluminosilicate and method of making it with the expected benefit of the material being a catalyst useable at elevated temperatures.

9. Claims 24-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esch, Richer and Stucky as applied to claims 8-16, 33, 36 and 37 above, and further in view of Pinnavaia II as cited above.

The disclosures of Esch, Richer and Stucky have been discussed above in paragraphs 6 and 7.

None of Esch, Richer or Stucky discloses the addition of aluminates to organosilicates in order to prepare organoaluminosilicates.

However, Pinnavaia II teaches that in the preparation of aluminosilicates, it is conventional to use an anionic aluminate source (col. 3, l. 17-34; col. 3, l. 53 to col. 4, l. 6; col. 4, l. 15-61).

It would have been obvious to one of ordinary skill in the art to apply the teaching of Pinnavaia II to the disclosures of Esch, Richer and Stucky with a reasonable expectation of

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obtaining a highly-useful organoaluminosilicate having a foam morphology and method of making it with the expected benefit of the material being a catalyst usable at elevated temperatures.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to J. Pasterczyk whose telephone number is 571-272-1375. The examiner can normally be reached on M-F from 9 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



J. Pasterczyk

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4/11/06


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